



**Technical Specification for  
HELMET WHITE ROYAL MARINES  
(2009 Pattern) with Detachable Liners  
and Detachable Headband**

**Defence Clothing (DC)**

PROPERTY OF  
MINISTRY OF DEFENCE



PREFACE

TABLE 1 – PRODUCT LIST

<b>Item Name</b>	<b>NATO Stock No's</b>	<b>Pattern Number</b>
<b>Helmet White Royal Marines (2009 Pattern) with Detachable Liners</b>	8415-99-667-5719 to 5730	D01998
<b>Detachable Headband</b>	8415-99-667-5731 to 5742	D01998 TG
<b>Development File No</b>	P6/865	

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TABLE 2 – ISSUE RECORD

<b>Issue No</b>	<b>Comments</b>	<b>Issue Date</b>
2	Change of item description on page 1 and 2 NATO Stock No. removed from paragraph 4.2 Colour of Touch & Close and Def Stan 83-86 inserted in paragraph 4.5 UK/SC/5126 inserted on page 5 and 7 Addition of page break between table 4 and 5	19 May 2011
1	Specification derived from UK/SC/4294 Complete specification review due to change from a natural cork helmet to a moulded ABS helmet	15 February 2010

PART 1

1. THE PRODUCT

- a. Use of the Product: A white helmet worn by the RM Marines

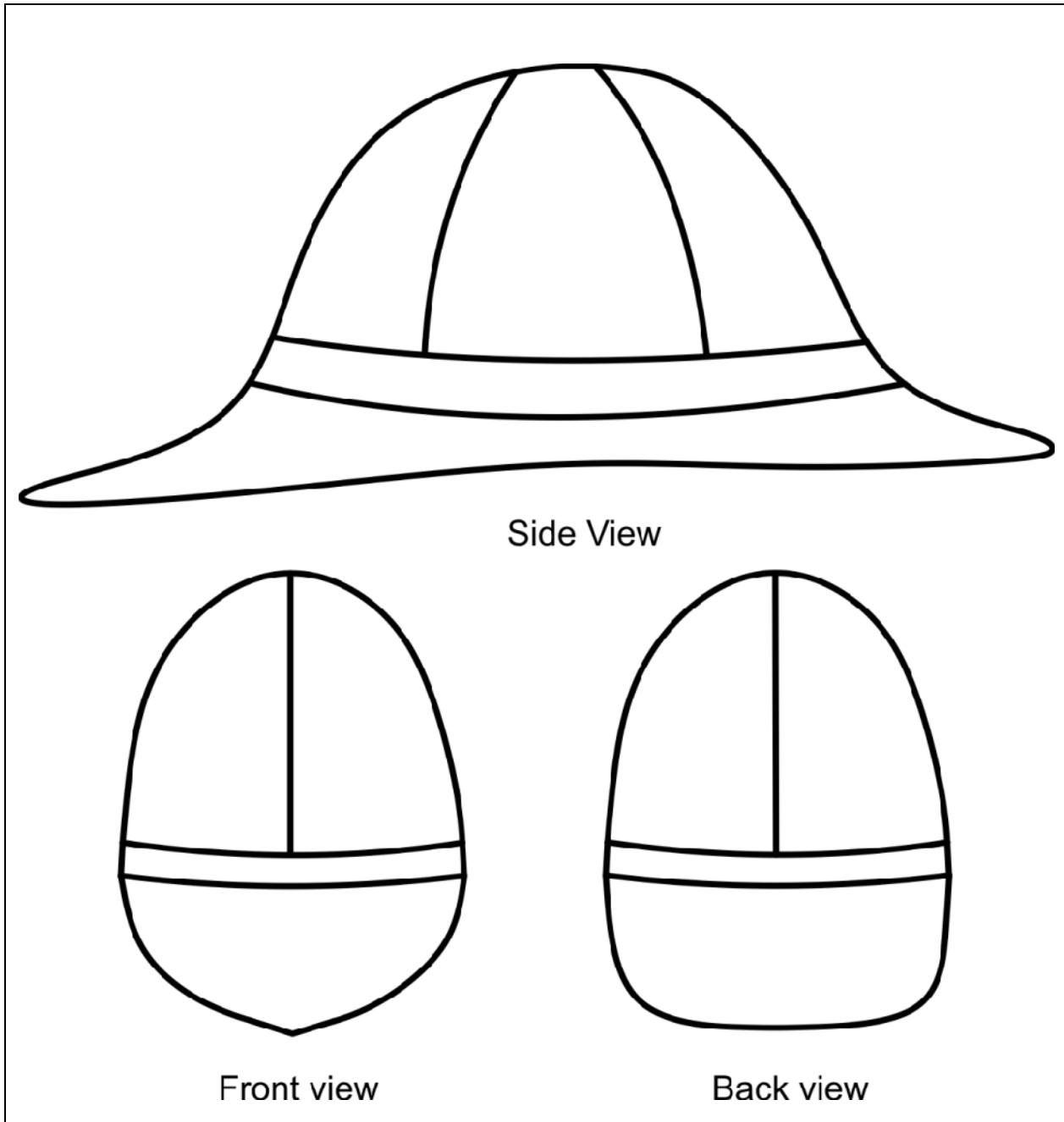


FIGURE 1: Helmet White Royal Marines

TABLE 3 - RELATED SPECIFICATIONS AND DOCUMENTS

Specification/Document	Detail
BS EN ISO 845	Cellular plastics and rubbers – Determination of apparent (bulk) density
BS EN 12590	Industrial sewing threads made wholly or partly from synthetic fibres
BS 3870 Part 1 & 2	Stitches and seams
DEF STAN 83-86	Touch and close fastener
UK/SC/5126	Insignia, buttons, pins, plates and titles manufactured from gilding metal, brass and nickel silver
UK/SC/5900	Cloth cotton 3 x1 twill FS SF

## 2. PATTERNS.

- a. Master Patterns: DC holds a Master Pattern for this product. Potential contractors may view the pattern on site by arrangement with the DC Commercial Department.
- b. Standard Patterns: A Standard Pattern may be obtained from the DC Technical Information Office and may be used to provide the criteria for all materials, components and manufacturing features not fully defined in this specification.

PART 23. PRODUCT DESIGN

Product Description: An ABS moulded helmet with a white cotton drill cover, for wear by Royal Marines as part of No1 Dress. The size schedule provides for 12 sizes

TABLE 4 – PRODUCT COMPONENTS

4.1	Helmet Shell	White 3mm High Impact, Acrylonitrile Butadiene Styrene (ABS) Smooth
4.2	Cloth for outer cover, band and brim lining	Cloth cotton 3 x 1 twill white to UK/SC/5900, Pattern No 8078A Or an alternative approved by DC
4.3	Crown lining	100% polyester lining, green
4.4	Brim lining	Stretch PVC, green
4.5	Touch and close fastener	Touch & Close, Black to Def Stan 83-86 <b>Lining</b> - 16mm loop element <b>Inside shell</b> -16mm and 25mm hook element Selvedges are to be heat sealed to prevent fraying
4.6	Detachable Headband – Cloth and foam	Cloth, honeycomb, black, laminated to 3mm foam (worn next to the head), as on standard pattern Cloth, black brushed nylon laminated to 3mm foam, to attach to the hook element of the touch and close fastener, as on standard pattern <u>Interlining</u> -Both these fabrics should be bonded to 3mm flexible polyurethane foam having cells of uniform size and conforming to the requirements of Table 9 <u>Filler</u> - Low density polyethylene foam Not less than 1mm and not more than 4.5mm
4.7	Drawstring	Tape white cotton as on standard pattern
4.8	Curb chain hooks	Brass length from attachment 4cm, bent at 45°, length from bend 1.2cm

TABLE 4 – PRODUCT COMPONENTS continued

4.9 Rivets for curb chain hooks	<ul style="list-style-type: none"> <li>• Nickel plated 6.4mm wide tubular</li> </ul>
4.10 Glue for bonding	<ul style="list-style-type: none"> <li>• Compatible glues for bonding the following:-             <ol style="list-style-type: none"> <li>1. white covering to the outer shell</li> <li>2. brim lining to the inner shell</li> <li>3. touch and close fastener to inner shell</li> <li>4. cloth to foam in the detachable head band</li> </ol> </li> </ul>
4.11 Ventilator	<ul style="list-style-type: none"> <li>• Brass 3.5cm diameter with bored and threaded 14mm long central boss with washer</li> <li>• To accommodate the Ball Ornament Helmet RM, to UK/SC/5126, Pattern No. D00687, NATO Stock Number 8465-99-741-0709</li> </ul>
4.12 Thread for all purposes	<ul style="list-style-type: none"> <li>• Thread corespun polyester/cotton to BS EN 12590</li> <li>• Metric Ticket No. 75 for all sewing</li> </ul>

TABLE 5 – PRODUCT CONSTRUCTION

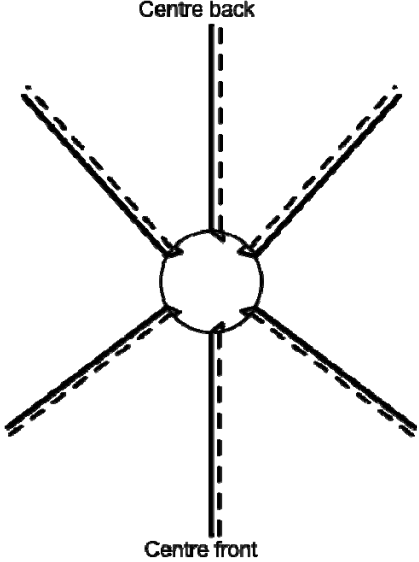
5.1 Inner shell	<ul style="list-style-type: none"> <li>The shell, formed from ABS</li> <li>Is to be identical in shape and dimensions to the Standard Pattern for that size</li> </ul>
5.2 Brim Lining	<ul style="list-style-type: none"> <li>Brim lining to be cut as one</li> <li>This is then to be bonded to the inside of the shell</li> </ul>
5.3 Crown lining	<ul style="list-style-type: none"> <li>The crown lining is to cut in six panels and seamed using seam type 1.01.01 to BS 3870 Part 2</li> <li>Crown lining to be hemmed using seam type 6.02.01 to BS 3870 Part 2</li> <li>Loop element, touch and close fastener, 16mm wide is attached to the hem of the lining</li> <li>Hook element, touch and close fastener, 16mm wide to be attached to the shell, positioned so the crown lining lies flat in the shell</li> </ul>
<p>5.4 Crown Covering</p>  <p>Centre back</p> <p>Centre front</p> <p>Top view of the crown to show the fold direction of each seam</p>	<ul style="list-style-type: none"> <li>The outer covering is to be cut in six panels joined using seam type 2.02.01 to BS 3870 Part 2.</li> <li>The depth of seam should be 5mm +/- 1</li> <li>The direction of the in-turn of the seams is to be as diagram</li> <li>This cover is to be bonded to the inner shell under pressure</li> <li>Each seam shall be additionally traced all the way down with a boning tool</li> <li>The front seam should align correctly to the point of the front peak</li> <li>The cover should be free from air bubbles and show no sign of delamination</li> </ul>
5.5 Brim binding	<ul style="list-style-type: none"> <li>The brim is to be bound using seam type 3.05.01 to BS 3870 Part 2</li> <li>The join is to be overlapped on the right side of the helmet &amp; pointing to the rear</li> <li>Edge binding to be as on Standard Pattern</li> </ul>
5.6 Ventilator	<ul style="list-style-type: none"> <li>The ventilator and washer are to be clenched through the centre of the shell crown and attaching the lining as on the standard pattern</li> </ul>



TABLE 5 – PRODUCT CONSTRUCTION continued

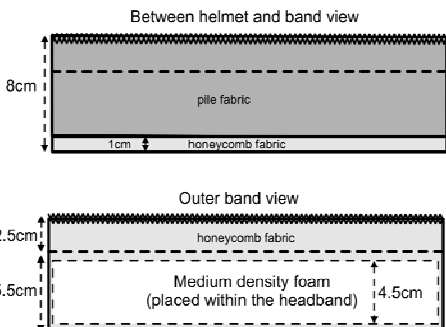
<p>5.7 Curb chain hooks</p>	<ul style="list-style-type: none"> <li>• The hooks are to be riveted to the inside of the helmet, one on each side</li> <li>• Opening to the outer brim</li> <li>• The hook should have a 12mm crank &amp; positioned to create a gap of at least 3mm from the brim</li> </ul>
<p>5.8 Headband attachment</p>	<ul style="list-style-type: none"> <li>• The headband attachment, lengths of hook element, touch and close, 25mm wide, are to be securely bonded to the inside of the shell</li> <li>• The touch and close fastener is to cut and glued so it lies flat against the inside of the shell</li> </ul>
<p>5.9 Detachable Headband</p> 	<ul style="list-style-type: none"> <li>• The headband is to be cut as the standard pattern, 8cm deep, length as size schedule</li> <li>• Outer fabric (bonded to foam), a black honeycomb, worn next to the head</li> <li>• The inner fabric (bonded to foam), a pile fabric to attach to the hook element of the touch and close fastener on the inside of the shell</li> <li>• Joined with seam type 1.01.01 to BS 3870 Part 2. honeycomb fabric to extend to the back of the headband by 1cm</li> <li>• To have a 2.5cm channel to facilitate the drawstring</li> <li>• Drawstring to be of sufficient length for a bow to be tied at back opening</li> <li>• 1mm to 4.5mm of low density foam dependent on helmet size</li> <li>• To be securely attached inside the two layers of fabric as on the standard pattern</li> </ul>

TABLE 5 – PRODUCT CONSTRUCTION continued

5.10 Outer Crown Band	<ul style="list-style-type: none"><li>• Band 2.7cm deep, turned back at top and bottom using seam type 6.02.01 to BS 3870 Part 2 and topstitched</li><li>• Joined at the centre back using seam type 1.01.01 to BS 3870 Part 2, so as to create a tight fit over the shell</li><li>• Constructed in a way to give a smooth appearance</li></ul>
5.11 Stitching	<ul style="list-style-type: none"><li>• All stitching is to be stitch type 301 to BS 3870 Part 1</li><li>• Cover seams, internal lining, detachable headband and outer crown band 8-10 stitches per 2cm</li><li>• Brim binding 6-8 stitches per 2cm</li></ul>

TABLE 6 – SIZES AND NATO STOCK NUMBERS

<b>Head Size</b>	<b>NATO Stock Number for Helmet including headband</b>	<b>NATO Stock Number for Detachable Headband only</b>
Size 52	8415-99-667-5719	8415-99-667-5731
Size 53	8415-99-667-5720	8415-99-667-5732
Size 54	8415-99-667-5721	8415-99-667-5733
Size 55	8415-99-667-5722	8415-99-667-5734
Size 56	8415-99-667-5723	8415-99-667-5735
Size 57	8415-99-667-5724	8415-99-667-5736
Size 58	8415-99-667-5725	8415-99-667-5737
Size 59	8415-99-667-5726	8415-99-667-5738
Size 60	8415-99-667-5727	8415-99-667-5739
Size 61	8415-99-667-5728	8415-99-667-5740
Size 62	8415-99-667-5729	8415-99-667-5741
Size 63	8415-99-667-5730	8415-99-667-5742

TABLE 7 – MEASUREMENTS AND TOLERANCES

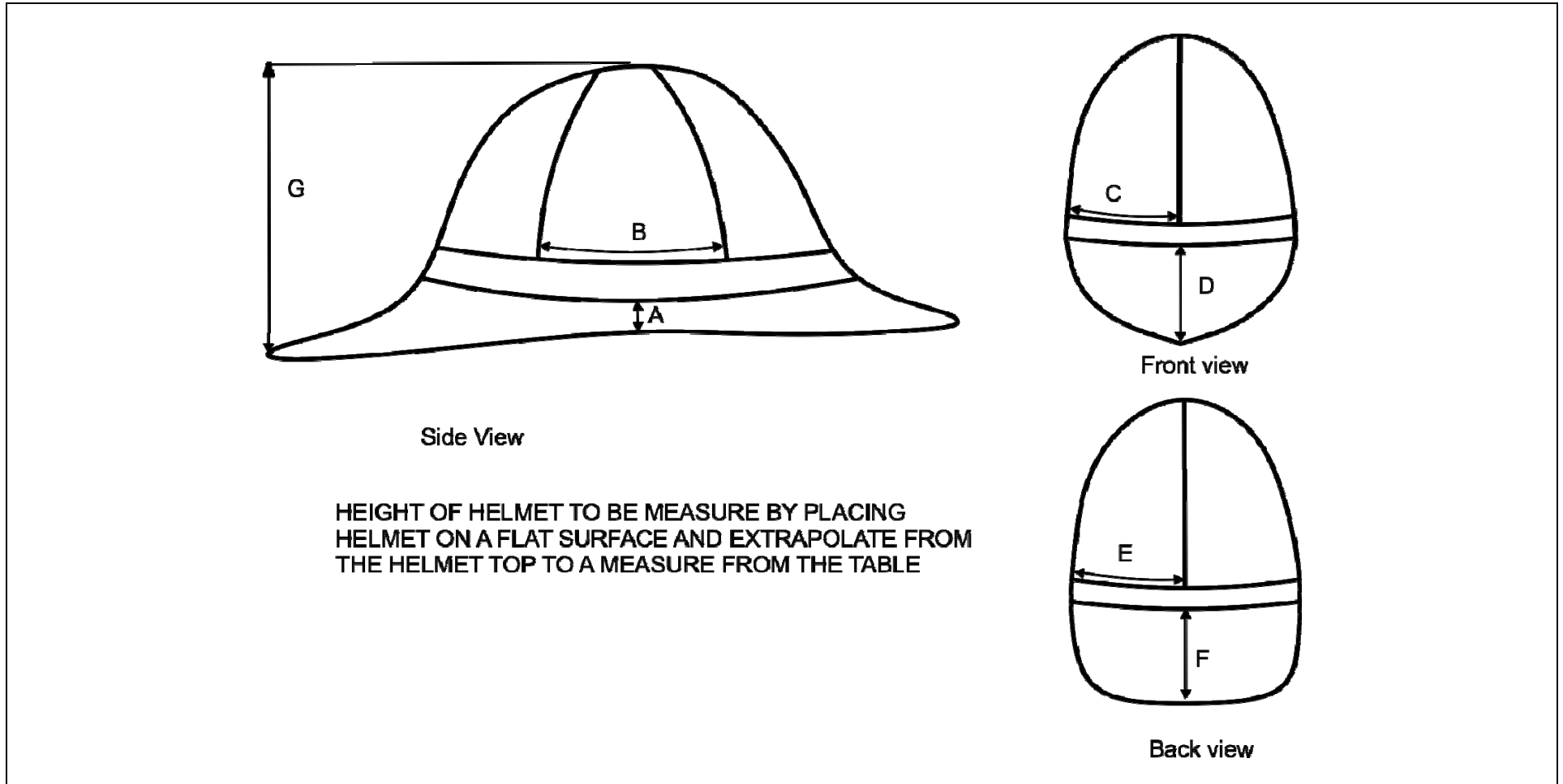


FIGURE 2- MEASUREMENTS

**TABLE 7 – MEASUREMENTS AND TOLERANCES continued**  
All measurements in centimetres

	Helmet size	Length of headband	Brim depth at side from bottom of band	Side panel at top of band	Front panel at top of band	Front peak from bottom of band	Back panel at top of band	Back peak from bottom of band	Height
			<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>F</b>	<b>G</b>
Small Helmet	52	54	5	10.5	10.5	7	9	8.5	18
	53								
	54								
Medium Helmet	55	57	5	11	11	7	9.5	8.5	18
	56								
	57								
Large Helmet	58	60	4.5	11.5	11.5	7	10	8.5	18
	59								
	60								
Ex-Large Helmet	61	63	4.5	12	12	7	10.5	8.5	18
	62								
	63								
Tolerances ±		0.5	0.2	0.3	0.3	0.3	0.3	0.3	0.5

The measurements B, C, E shall be from top stitch line to top stitch line in Figure 2

8 LABELLING REQUIREMENTS

TABLE 8 – SPECIMEN LABELS

MARKED ON Outer Packaging (Box)

MARKED ON Outer Packaging (Box)

Size 52
Helmet and Headband NSN
8415-99-667-5719
Contract No

MARKED ON THE HEADBAND

Size 52
Detachable Headband NSN
8415-99-667-5731
Contract No.

The helmets shell size is to stamped on the inside of the shell at the back above the touch and close fastener

<b>Head Sizes</b>	<b>Helmet Shell details to be stamped on shell</b>
Sizes 52, 53, and 54	Small
Sizes 55, 56, and 57	Medium
Sizes 58, 59, and 60	Large
Sizes 61, 62, and 63	Ex-Large

9 TEST METHODS

TABLE 9 – METHOD OF TEST

Flexible Polyurethane foam

PROPERTY	REQUIREMENT	METHOD OF TEST
Apparent density kg/m <sup>3</sup>	25-30	BS EN ISO 845